

**REMARKS/ARGUMENTS**

Favorable consideration of this application is respectfully requested.

Claims 1-12 are presented for examination.

The outstanding Official Action presents a rejection of Claims 1-12 under 35 U.S.C. §103(a) as being unpatentable over Herberling (U.S. Patent Application Publication No. 2003/0214967) in view of Johansson et al. (U.S. Patent Application Publication No. 2002/0044549, hereinafter "Johansson").

Applicant again notes that the claimed subject matter is directed to providing channel allocation in an ad-hoc radio communication network using Code Division Multiple Access (CDMA) as the multiple access scheme. The ad-hoc radio communication network is formed as a system including devices gathered together to form piconets. One of the devices in each of the formed piconets is designated as a piconet coordinator (PNC). The set of available CDMA codes is split into pre-defined disjointed subsets of CDMA codes ( $C_1$ ) known by each device. Each new device added to the system scans the new device radio environment looking for any subset of CDMA codes ( $C_i$ ) that are presently being used by an associated existing piconet. If the scanning determines that no subset of CDMA codes ( $C_i$ ) are presently being used by an existing piconet, the new device is designated as a piconet coordinator (PNC) of a new piconet and a subset of the CDMA codes ( $C_i$ ) is selected for use in the new piconet. On the other hand, if the scanning reveals a set of one or more existing piconets are using corresponding subsets of CDMA codes ( $C_i$ ), the availability of any of the one or more existing piconets as to adding the new device thereto is determined and the new device is added to an available one of the one or more existing piconets.

Turning to Herberling, the outstanding Action mischaracterizes the teachings thereof in many respects. For example, while paragraph [0010] of Herberling teaches a single piconet 305 made up of a coordinator 310 and non-coordinator devices 321-325 as shown in

FIG. 3, there is no teaching here of the claimed “ad-hoc radio communication system comprising devices having an equivalent communication architecture, the devices being gathered in several piconets.”

Also, while paragraph [0038] of Herberling does suggest that “[e]ach of the plurality of signal channels may have a different carrier frequency, a different center frequency, may operate at a unique CDMA code, or may have a different combination of center frequency and CDMA code,” this is not a teaching of the Claim 1 requirement that “a set of available CDMA codes is split into pre-defined disjointed subsets of CDMA codes ( $C_i$ ), all the subsets of CDMA codes ( $C_i$ ) being known by each device, and all the devices of a same piconet using CDMA codes in the same associated subset of codes ( $C_i$ ) for communicating with one another.”

In addition, while paragraph [0028] Herberling teaches that there can be interference due to other networks and paragraph [0069] suggests that the current network 300 of devices 310 (coordinator) and 321-325 (non-coordinator devices) can all together become a dependent network of such an existing network, this is not a suggestion of any new device joining any network in the manner specified by Claim 1 as follows:

each new device scanning its radio environment looking for at least one used subset of CDMA codes ( $C_i$ ) which is associated with an existing piconet,

making the new device a piconet coordinator (PNC) of a new piconet and selecting a subset of CDMA codes ( $C_i$ ) for use in the new piconet if no used subset or subsets of CDMA codes ( $C_i$ ) are found by the scanning, or

joining the new device into an existing piconet among a set of available piconets found by the scanning to be using an existing subset of CDMA codes ( $C_i$ ), and using said existing subset of CDMA codes ( $C_i$ ) for the next communications between the new device and the other devices of the existing piconet that is joined.

Instead of addressing these specific Claim 1 limitations, or the similar limitations of independent Claims 11 and 12, and pointing to corresponding teachings in Herberling, the

outstanding Action attempts to take the dissimilar Herberling teachings of paragraphs [0057]-[0074] out of context. In this regard, paragraphs [0057]-[0074] of Herberling teach that the coordinator 310 of network 300 determines if switching a channel is necessary due to interference, not because any new device is seeking to join the piconet. The coordinator 310 of network 300 accomplishes this by assigning the job of channel quality determination to one of the non-coordinator devices 321-325 in the network 300 so that the coordinator 310 can avoid shutting down the operation of the network 300.

This determination of channel quality by non-coordinator devices is not taught or suggested to be performed by a new device seeking to be added to the ad-hoc radio communication system. Instead, it is done by one of the non-coordinator devices 321-325 that is already a part of network 300 in response to a coordinator 310 request. See paragraph [0059] as follows:

Thus, if there are non-coordinator devices 321-325 within a network 300 that are capable of performing a channel quality determination, the coordinator 310 may request one of those non-coordinator devices 321-325 to perform such a function and report back to the coordinator 310 with the results. The coordinator 310 can then continue with network processing, allowing the requested non-coordinator device 321-325 to stop only its own operations while it determines the quality of the existing channels. And in some cases, if the requested non-coordinator device 321-325 can perform the channel quality determination quickly enough, it may not have to stop its own operations to any significant degree.

Moreover, not only does the Herberling teaching of non-coordinator device channel quality determination have nothing to do with “a new device being added to the ad-hoc radio communication system,” it has nothing to do with the Claim1 requirement that the “new device scanning its radio environment looking for at least one used subset of CDMA codes ( $C_i$ ) which is associated with an existing piconet,” or the Claim1 requirement for “making the new device a piconet coordinator (PNC) of a new piconet and selecting a subset of CDMA codes ( $C_i$ ) for use in the new piconet if no used subset or subsets of CDMA codes ( $C_i$ ) are

found by the scanning,” or the Claim 1 recited alternative of “joining the new device into an existing piconet among a set of available piconets found by the scanning to be using an existing subset of CDMA codes ( $C_i$ ), and using said existing subset of CDMA codes ( $C_i$ ) for the next communications between the new device and the other devices of the existing piconet that is joined.” Likewise, it has nothing to do with the similar limitations of independent Claims 11 and 12.

In actuality, paragraph [0022] of Herberling teaches that new devices are added to the network 300 by requesting “entry from the coordinator 310 in the contention access period 330 or during an association management time slot.” This is clearly not the same as a new unit “scanning its radio environment looking for at least one used subset of CDMA codes ( $C_i$ ) which is associated with an existing piconet” as Claim 1 requires or the similar requirements of independent Claims 11 and 12.

Johansson teaches a piconet system using “Bluetooth” units that use the standard “Bluetooth” **“slave” to “master” relationship** in which the slaves cannot directly communicate, all communication being through the “master.” See paragraph [0006] of Johansson and note the description of “Bluetooth” as using “time division multiplexing” at col. 4, lines 48-50 of U.S. Patent No. 7,164,886 (Mowery, et al.), for example. Clearly the Johansson teachings of a piconet system of using “Bluetooth” units that use standard “slave” to “master” relationship in which the “slave” units can only communicate through the master is not compatible with the Herberling suggestion of communication between non-coordinator devices 321-325 (slaves) that do not require the coordinator 310 (master).

Also, paragraph [0017] of Johansson teaches that in general a new device joins an existing piconet by use of a “PAGE message” as follows:

When a Bluetooth unit desires to establish a connection with a neighboring node, the Bluetooth unit sends a PAGE message. A PAGE message consists of the Device Access Code (DAC), derived from the BD\_ADDR of the paged Bluetooth unit. A Bluetooth unit, e.g., Bluetooth unit 2, receiving a PAGE message including its own DAC responds with an

identical packet, i.e., a packet including only the DAC of the paged Bluetooth unit. The paging Bluetooth unit, i.e., Bluetooth unit 1, then replies with an FHS packet, including the BD\_ADDR of the paging Bluetooth unit (Bluetooth unit 1), the current value of the internal clock of the paging Bluetooth unit (Bluetooth unit 1), the AM\_ADDR assigned to the paged Bluetooth unit (Bluetooth unit 2) and some other parameters. The paged Bluetooth unit (Bluetooth unit 2) then responds with its DAC and thereby the connection between the two Bluetooth units is established.

What is clear from this paragraph [0017] disclosure is that there is no teaching of scanning the radio environment to look for anything. The “Bluetooth” unit sending the “PAGE message” must already know the BD\_ADDR of the Bluetooth unit it is sending the “PAGE message” to as the Device Access Code (DAC) must be derived from the BD\_ADDR of that Bluetooth unit.

The outstanding Action ignores this teaching of paragraph [0017] of Johansson as to a “PAGE message” that is sent to a known “Bluetooth” unit to be a “Page scan for a broadcast address in a piconet” and attempts to mischaracterize paragraphs [0013] and [0018] as teaching a Bluetooth unit that “scans and searches for available communication channel” as if a “PAGE message” was not being sent to a known “Bluetooth” unit. However, it is clear that this “PAGE message” procedure is what is used from the reference to “Page procedure” in booth paragraphs [0013] and [0018].

Independent Claims 1, 11, and 12 all require that each new device must scan “its radio environment looking for at least one used subset of CDMA codes ( $C_i$ ) which is associated with an existing piconet” and neither Herberling nor Johansson teaches or suggests this specifically claimed scanning. PTO speculation and assumptions as to reference teachings are not reference teachings and cannot be used in place of the actual reference teachings. *See In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967) (“The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis.”).

Moreover, while paragraph [0018] of Johansson teaches that:

If the paging Bluetooth unit already was the master of a piconet, the paged Bluetooth unit has now joined this piconet as a new slave unit. Otherwise, the two Bluetooth units have just formed a new piconet with the paging Bluetooth unit as the master unit. Since the INQUIRY message does not include any information about its sender, in particular not its BD\_ADDR, the Bluetooth unit that initiated the INQUIRY procedure is the only one that can initiate a subsequent PAGE procedure. Thus, the Bluetooth unit initiating an INQUIRY procedure will also be the master of any piconet that is formed as a result of a subsequent PAGE procedure.

The result of this teaching is that the paged unit joins the piconet of the unit doing the paging (and sending the “INQUIRY”) when it is the master of an existing piconet” or that the two units form a new piconet if the paging unit was not the master of an existing piconet. This is completely different from the requirements of independent Claims 1, 11, and 12 as to how existing piconets are joined or new piconets formed.

Accordingly the rejection of independent Claims 1, 11, and 12 under 35 U.S.C. §103(a) as being unpatentable over Herberling in view of Johansson is traversed and it is respectfully requested that this rejection be withdrawn.

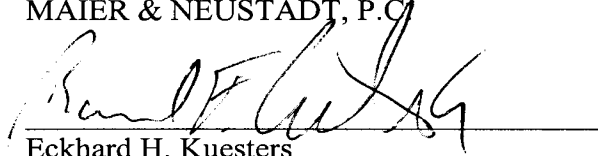
Dependent Claims 2-10 all depend from Claim 1 either directly or indirectly. Thus, Claims 2-10 all include the subject matter of Claim 1 argued above. Accordingly, the rejection of dependent Claims 2-10 under 35 U.S.C. §103(a) as being unpatentable over Herberling in view of Johansson is traversed for the reasons noted above. In addition, each of Claims 2-10 adds further subject matter that is also not taught or suggested by either Herberling or Johansson considered alone or together in any proper combination and this rejection of Claims 2-10 is traversed for this reason as well. It is therefore respectfully requested that this rejection of dependent Claims 2-10 should also be withdrawn.

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Reply to Office Action of 02/07/2008

Accordingly, it is respectfully submitted that no further issues remain outstanding in the present application, and that this application is clearly in condition for formal allowance and an early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Eckhard H. Kuesters", is written over a horizontal line.

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